## NEW NEUROPTEROID INSECTS.

BY NATHAN BANKS.

**Perla trivittata** nov. sp.—Length 14 mm. Head fulvous, with a large trilobed black spot above, the upper lobe largest and covering the ocelli, the lower lobes extending toward the antennæ; below a black V-shaped spot with the apex upward. Antennæ and mouth-parts black; a black spot behind each eye; prothorax slightly broader in front than behind, its angles rounded; fulvous, with the side margins very broadly black, a narrow black median stripe, and the anterior margin narrowly black; rest of thorax fulvous, mostly covered with large black spots. Legs fuscous, with a pale yellowish elongate spot in front and behind on all femora and on posterior tibiæ. Abdomen brown, a pale stripe on venter, setæ dark brown. Wings brownish, veins blackish, transversals at end of discal cells nearly opposite, radial sector forked but once, upper fork much more than twice as long as pedicel beyond transversals, three transversals between the postcubiti.

One male, Michigan Agricultural College, Michigan, C. F. Baker collector.

**Chloroperla borealis** nov. sp.—Length 14 mm. Yellowish; head a little broader than the prothorax, pale yellow, with a dark V-shaped mark connecting the ocelli, two dark spots in front, and a small reddish tubercle each side; palpi blackish, antennæ fuscous, yellowish at base; prothorax short, twice as wide as long, a little broader in front than behind, the angles broadly rounded; pale yellow, the elevated margin blackish, each side a little rugulose and brownish; rest of thorax and the abdomen brown. Legs brownish yellow, a transverse black line at ends of femora; setæ short, yellowish in middle, brownish at ends. Wings greenish yellow, veins of anterior pair, except subcosta and radius, brownish (in one wing there are two transversals beyond subcosta, but one is bent and appears abnormal), transversals at end of discal cells are opposite each other, and the upper fork of radial sector is more than twice as long as the pedicel beyond these, there are five transversals between the cubiti.

One female, Olympia, Wash., April (Trevor Kincaid). A male from Ft. Collins, Colo., is smaller, 10 mm., and the radius is only yellowish toward base, the transversals at end of discal cells are slightly separated, and the forks of radial sector are not quite so long, otherwise it is like the female.

**Chloroperla pacifica** nov. sp.—Length 10–12 mm. Yellowish, head a little broader than prothorax, pale yellow, ocelli black. Antennæ yellowish, palpi brownish; prothorax short, fully twice as wide as long, the anterior angles moderately prominent, the posterior ones broadly rounded, the side margins distinctly black, within slightly rugulose. Legs pale yellow, with a black transverse line at ends of femora. Thorax yellowish, an oblique black suture on meta- and mesothoracic pleura. Abdomen yellowish. Wings pale yellowish, all veins yellowish, the transversals at end of discal cells are opposite to each other, the upper fork of radial sector is one and one-half times as long as the pedicel beyond transversals; there are four or five transversals between the cubiti.

Three specimens, Skokomish River, Wash., May (T. Kincaid).

**Chloroperla imbecilla** Say.

A specimen from Olympia, Wash., agrees with eastern examples

of this species. The transversals at end of discal cells are separated, and the upper fork of radial sector is at least twice as long as the pedicel; there are three, sometimes four, transversals between the cubiti.

**Chloroperla signata** nov. sp.—Length 7.5 mm. Yellow, head slightly broader than prothorax, pale yellow, a black triangular spot connecting the ocelli, another smaller triangular spot below with its apex nearly touching the apex of the upper spot; palpi brownish. Antennæ yellowish; prothorax short, elliptical, pale yellow, with a prominent black median stripe, which is slightly broader behind, and on the front margin twice as broad as in the middle, sides slightly rugulose; meso- and metathorax with an indistinct, median, brown stripe. Legs pale yellowish, tibiæ more brownish. Abdomen yellowish, apex broken. Wings yellowish hyaline, veins in fore wings, except subcosta and most of radius, brown; transversals at end of discal cells widely separated, upper fork of radial sector hardly one and one-half times as long as the pedicel beyond the outer transversal, four transversals between cubiti; some of the veins of posterior wings brownish at tips.

One specimen, Ft. Collins, Colo. (C. P. Gillette).

**Choroperla brevis** nov. sp.—Length 6 mm. Greenish yellow, head a little broader than thorax, antennæ with basal third yellowish beyond black; prothorax with a fuscous stripe on each side margin, once and one-half as long as broad, barely broader in front, angles rounded, scarcely rugulose; tarsi slightly fuscous. Wings nearly hyaline, with greenish veins, transversals at end of discal cells disjointed, the upper fork of radial sector is not as long as the pedicel beyond these transversals (in one specimen it is just as long), three transversals between the cubiti.

Sherbrooke, Canada (L'abbé P. A. Bégin).

**Megalomus mœstus** nov. sp.—Length 7 mm. Antennæ a little longer than breadth of wings. Wings quite broad, but over twice as long as broad; margin ciliate, costal area strongly dilated toward base, costal veinlets forked, radius with six branches, the last forked at or before first gradate series; two gradate series, first across middle of wing, indented in middle, second one toward the apex and incomplete. Antennæ, legs and palpi luteous, face pale yellowish, vertex darker. Thorax yellowish, mesothorax brown on each anterior side. Abdomen paler; wings hyaline, veins pale, dotted with black, around the margin groups of veins are alternately black, a broad fuscous band across middle of wing just inside of the first gradate series, several dark patches and an indistinct band beyond the second gradate series; two slender, up-curved, slightly divaricate processes project from the tip of the abdomen.

One female, Santa Fé, New Mexico, July (T. D. A. Cockerell).

**Chrysopa coloradensis** nov. sp.—Length 15 mm. Face yellow, a broad black stripe under each eye, a curved black line under and on the outside of each antennal socket, very narrow on the outside; vertex green, a black stripe each side behind the eye, pointed in front toward the outer edge of the antennal socket; basal fourth of antennæ black, basal joint yellow, second joint fuscous, rest of antennæ pale yellowish brown. Thorax short, green, broadly margined each side with red; meso- and metathorax green, with a pale reddish stripe each side. Legs green, feet brownish. Wings greenish: pterostigma long, brownish green; fore wings barely pointed, hind wings more distinctly so; in fore wings the lon-

gitudinal veins mostly green, base of first sector and base of cubitus black; the costals, the first series of transversals, the gradate veinlets, and the branches of the anal vein, black; a few of the other veinlets have their ends black; in hind wings the veins, except costals, are mostly greenish.

One specimen, Ft. Collins, Colorado (C. P. Gillette).

**Nothochrysa virginica** Fitch.

*Chrysopa virginica* Fitch, i, N. Y. Rept. p. 91.

*Nothochrysa phantasma* MacGillivray, Can. Ent. 1894, p. 170.

Fitch's species is certainly a *Nothochrysa*, and specimens of Mr. MacGillivray's species (which he kindly sent me), agree with Fitch's description in detail.

**Coniopteryx fitchi** nov. sp.—Length 2.5 mm. Head yellowish, antennæ brownish with white hair. Thorax yellowish, with four round black spots above. Legs pale yellowish. Abdomen yellowish, more reddish below; wings gray; venation as in *C. vicina*, except that the forks of the second sector are plainly longer than the pedicel (in *C. vicina* shorter than pedicel), the upper fork is curved toward the costa near tip, the vein that connects the first and second fork is almost obsolete (distinct in *C. ricina*), and there is no connecting vein between the cubitus and post-cubitus (distinct in *C. vicina*). Eyes globose, wings not ciliated.

One specimen, Ft. Collins, Colorado (C. P. Gillette).

**Panorpa canadensis** nov. sp.—Length 11 mm. Reddish, antennæ black, black around ocelli. Legs and abdomen pale yellowish. Wings hyaline; an apical band, broken up on posterior side; a slender, geniculate, pterostigmatical band; a costal middle spot; two spots of a basal band, and a very small basal spot dark brown; wings a little more slender than in *P. debilis*, subcosta extending to pterostigma. Abdomen short; second segment not produced behind; fifth segment of male cylindrical, with a stout projection above; sixth and seventh subequal, sixth with base slender, quite suddenly swollen above and below, seventh gradually enlarging, but not as large as the sixth; eighth short, forceps short, stout, appendages short, not reaching to base of claws.

One male and one female, Sherbrooke, Canada (P. A. Bégin).

Differs from *P. debilis* in smaller size, shorter forceps and appendages, as well as markings.

**Panorpa affinis** nov. sp.—Length 12 mm. Fulvous, abdomen luteous; wings hyaline, veins fuscous, a slender apical band, an interrupted pterostigmatical one, a middle spot on costa, an interrupted basal band and a basal spot, brown; subcosta runs into costa at middle in the fore wing: the radius does not curve inwardly as much at the pterostigma as in *P. nebulosa*, and the wing is less slender than in that species. Abdomen short, second segment not produced behind; fifth segment tapering, no projection above; sixth and seventh subequal, sixth obconical, curved at base, more swollen above than in *P. nebulosa*, seventh more regularly conical and not so large; eighth short and broad; forceps stout, appendages reaching to base of claws.

One male, Sea Cliff, N. Y. Differs from *P. nebulosa* in shorter, stouter form, more spotted wings, etc.

The species of *Panorpa* known to me from the United States and Canada may be separated by the following table. No species of the genus have been recorded from west of the Rocky Mountains.

1.—Subcosta of fore wings running into costa near middle, plainly before pterostigma, no horn above on fifth segment of male.....2.
Subcosta of fore wings running into costa at the pterostigma.....5.
2.—Wings black, with three narrow white bands.....**lugubris.**
Wings not black.....3.
3.—Large; wings yellow, with three complete black bands.....**rufa.**
Smaller; wings hyaline, no complete bands.....4.
4.—Radial vein curves inward to form pterostigma.....**nebulosus.**
Radial vein nearly straight at pterostigma.....**affinis.**
5.—Wings yellow, three complete brown bands.....**americana.**
Wings more hyaline, two bands more or less interrupted.....6.
6.—Male without horn above on fifth segment; no complete band on wings.
**maculosa.**
Male with a horn on fifth segment; at least one complete band to wings..7.
7.—Basal band nearly always complete, large species.....**subfurcata.**
Basal band of two spots, smaller species.....8.
8.—Wings flavescent, veins yellow.....**rufescens.**
Wings barely or not flavescent, veins more or less blackish.....9.
9.—Appendages of male not reaching to base of claw of forceps; veins mostly blackish, basal spot very small.....**canadensis.**
Male appendages reaching to base of claw of forceps.....10.
10.—Veins black, basal spot very small; second segment not produced behind.
**confusa.**
Veins partly yellowish, basal spot larger; second segment produced behind.
**debilis.**

**Rhyacophila pacifica** nov. sp.— Length 10-12 mm. Black, with golden hair on face and prothorax; antennæ black, slender, reaching to middle of wings. Legs, except black femora, mostly testaceous, a few small spines on tibiæ and tarsi. Wings blackish, darkest on costa and stigma, a few scattered patches of golden hair, and some golden hairs on the costal margin of hind wings at base; three whitish hyaline dots, one at arculus, one on the veinlet at end of thyridial area, and one on the origin of divisialis; venation as in *R. fuscula.*

Two specimens, Olympia, Wash. (Trevor Kincaid).

**Setodes avara** nov. sp.—Length 10 mm. Head yellowish, with gray and white hair; palpi densely clothed with gray hair; antennæ cinereous, tips of the joints slightly fuscous. Wings gray hyaline, with gray hair, forming a long fringe on hind margin; five fuscous dots as follows: one at forking of radial sector, one at origin of divisialis, one at forking of divisialis, another at arculus, and a fifth at end of lower branch of divisialis; three transverse gradate veinlets fuscous; upper branch of radial sector forks at the first transverse veinlet; coxæ and abdomen greenish. Legs pale yellowish, with white hairs.

One specimen, Sherbrooke, Canada, June (L'abbé P. A. Bégin). Related to *S. micans*, but easily separated by its more hairy palpi and fuscous dots on the wings.

**Philopotamus americanus** nov. sp.—Length 9-10 mm. Black, some tawny hairs on head and some on second joint of palpus, also a few on the thorax. Antennæ wholly black, about as long as wings; three distinct ocelli; tips of coxæ pale; hind legs mostly testaceous, hind tibiæ slightly curved and almost twice as long as the femur; spurs 2-4-4. Wings black, more or less thickly spotted with golden, generally following the veins; and four small white spots as follows: a larger basally furcate one before the middle of the wing on the origin of the divisialis, a transverse one at arculus, one at end of thyridial cell, and the fourth at end of thyridial area; but three distinct transverse veinlets in fore wing, one between branches of radial sector, another between radius and upper branch of radial sector, the third in the anal region; upper branch of radial sector forks a little before tip, lower branch forks near base.

Many specimens from a stream near Sea Cliff, N. Y., in December, March and April.